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THE EFFECT OF PHYSICAL STRENGTH ON PERSUASION ATTEMPTS BETWEEN TWO PARTIES

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Abstract

This article studies the impact of communicator and recipient physical strength on persuasion under a context of purchase. It consists of measuring purchase intentions of individuals with various levels of self-reported physical strength under the same context of purchase with three different conditions. Each of these conditions is defined by a picture of an advisor with a different body physique and muscularity. Results showed that advisor physical strength played a significant role among weak and strong individuals but not on medium ones, increasing purchase intentions on these categories. Lastly, several possibly explanatory variables were explored (e.g. Confidence, Attractiveness) as well as potential mediators on vigilance against persuasion.

Keywords: Persuasion, Purchase Intentions, Physical Strength, Vigilance

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Literature Review

Aiming to optimize business practices and further understand the consumer, there has been an increased interest in merging various scientific fields that may provide the tools to reach those goals. For example, capitalizing on knowledge on Psychology, Marketing has evolved to be more predictive and personal, with further understanding on how humans behave. This promotes a better alignment of corporate tactics and strategies to better respond to consumer motivation, increasing sales and consumer satisfaction. In this paper, I intend to explore aspects of Social Psychology to infer on specific behaviors that are relevant for businesses, providing insights on the relationship that is established between a salesman/advisor, his message to promote a sale and a costumer. The study being conducted specifically measures purchase intentions relative to different levels of recipient and persuader physical strength. Recipient physical strength has already been studied and hypothesized as a factor that contributes to persuasibility, thus inciting purchase. In my analysis, I theorize that persuader physical strength may also act similarly to other variables that have been shown to affect persuasion (e.g. attractiveness; perception of threat). The dynamics between both together will either hamper or increase persuasibility.

Research has shown that people are inclined to offer resistance on threats to their behavioral freedoms (Brehm, S. S., & Brehm, J. W., 1981). Specifically, following a threat to freedom of choice, there is an individual attempt to re-establish it, through an aversive arousal, coined as reactance. This occurs as we are sensitive to stimuli initiated by discrepancies, both positive and negative (Holbrook, Sousa, & Hahn-Holbrook, 2011) and, assuming threats as "discrepancies with an aversive character" (Greve & Strobl, 2004), there is an indication that there is a mechanism that moderates threat detection.

There have been several studies that have examined this effect. For example, Worchel, Arnold & Baker (1975) showed that censorship triggers both reactance and balancing attempts by monitoring the attitudes of college students before and after the ban of a speech advocating coed dorms; support increased after the speech was banned. Indeed, censorship increases desire for the censored material. Driscoll, Davis & Lipetz (1972), interviewed 140 couples and found that greater parental interference intensified the feelings of romantic love.

Through persuasion there is an attempt on attitude change which is perceived as a potential threat, as it may limit freedom of choice. For instance, companies aim to persuade potential customers to buy a product by creating positive attitudes towards it. Attitudes are relevant because they are predictors and influence behavior. Attitude change in this scenario is intended to elicit purchase, subjecting customers to a message that aims to make them partial towards a product. This bias may promote choosing differently than normally and ergo a not as rewarding product while also limiting available resources (e.g. money, time, cognition) to invest in others. Furthermore, individuals rely on preconscious processing effects (Janiszewski, 1988) and processing attention (Lavidge & Steiner, 1961; Rossiter & Percy, 1987) to evaluate stimuli. This evaluation is the basis of inferring manipulative intent, defined as inappropriate or unfair persuasion (Braiker, Harriet B., 2004), by which one considers to have an imbalance of benefits versus rewards relative to the persuader. There already has been a successful application of this model, the assessment of personal benefits and costs as the driver of inequity perception, in a wide range of business contexts (e.g. Huppertz, Arenson, & Evans, 1978). Also, individuals attempt to estimate the benefits and investments of the other person (Kirmani, 1990; Kirmani & Wright, 1989) to infer manipulative intent, indicating that there may be a concern tied to avoiding a potential vulnerable state relative to the other party, besides the inherent personal inequity that may be evident. Thus, people are sensitive and vigilant towards persuasive and manipulative intent, using instruments like persuasion knowledge as a defense (Campbell and

Kirmani, 2000; Kirmani & Zhu, 2007), which has been shown to be positively linked with skepticism (Mangleburg, 1998; Taylor & Nelson, 2012). Particularly, high levels of persuasion knowledge increase consumers' resistance to persuasive communication while raising their skepticism. For example, doctors who are exposed to medical sales representatives acquire more persuasion knowledge and are aware of the selling tactics used to elicit attitude change. This increases both their skepticism and resistance towards medical sales representatives, often engaging in defensive behavior or requiring compensation to prescribe.

The bi-directional relationship that emerges from a persuasion attempt leads me to hypothesize that physical strength may be a variable that impacts its outcome, both as a moderator of individual threat recognition and as a peripheral cue. It has been proposed that an individual's strength contributes to an increase of the threshold by which inferences of manipulative intent occur as it will impact negatively his threat recognition and consequently increase the likelihood of persuasion (Campbell, Consiglio & Van Osselaer). I propose that physical strength of the message source will trigger threat recognition more promptly, making persuasion more salient, triggering reactance and hampering its success in case it surpasses the threshold of threat recognition. Nonetheless, this variable is generally predicted to promote persuasibility.

Clarifying, during communication, physical strength, an attribute that I predict to contribute to persuasibility may backfire if the message source is considered a threat. Stronger individuals are likely to be perceived as a potential greater risk upon conflict, especially relative to vulnerable targets. Also, the likelihood of the message source to be perceived as a threat increases with its physical strength, exacerbating the former effect. In situations where there is no threat recognition, physical strength is expected to impact persuasibility positively as it is associated with better communication skills, real and perceived dominance and attractiveness.

It has been indicated that physical strength correlates with dominance (Toscano, Schubert, Dotsch, Falvello & Todorov, 2016). In Ethology, dominance is characterized as a trait which

permits an individual to better access resources through a repertoire of agonistic behavior. Indeed, being more apt, in a context of competition, will lead to increasingly successful outcomes in terms of resource gathering. Specifically, physical strength enhances fighting ability and capacity to hold resources. Humans, like most social species, also possess mechanisms that assess physical formidability as a determinant of fighting ability and dominance (Sell, Cosmides, et al., 2009; Toscano, Schubert, & Sell, 2014; Windhager, Schaefer, & Fink, 2011). For example, stronger and taller men are more likely to be assigned and associated with higher social status by others meaning that physical formidability is related to the perception of likelihood of success (Lukaszewski, Simmons, Anderson, & Roney, 2016). Indeed, physical strength impacts both real and perceived status among individuals.

Muscularity is paramount in attaining a higher rank in dominance-based hierarchies. In fact, muscularity seems to be so tied with dominance that not only are muscular individuals perceived to be more dominant but also dominant individuals are associated with increased muscularity (Blaker & van Vugt, 2014). This relationship is suggested to be universal and not culturally learned as children associate size with more dominance, pointing to the fact that it may be a biological evolutionary bias. Upon engaging in communication where persuasive intent is present, a relationship between two social individuals and often a balance of power arises, raising or crumbling personal barriers. The correlation between physical prowess and dominant aptitude is likely to influence the dynamics at play in any persuasion attempt.

Additionally, impressions that we make of others are often based on visual cues, like facial features (e.g., Bar, Neta, & Linz, 2006; Todorov, Pakrashi, & Oosterhof, 2009; Willis & Todorov, 2006), especially those tied to dominance (Jones et al., 2010; Oosterhof & Todorov, 2008; Watkins et al., 2010; Watkins, Jones, & DeBruine, 2010). One factor that has been studied as having a positive role in persuasion is the attractiveness of the persuader (Chaiken, 1979; Horai, Naccari & Fatoullah, 1974), which may be biased by social constructs of aesthetics

and directly related to a person's fitness. In fact, physical strength and muscularity are tied positively to attractiveness (Yanover & Thompson, 2010; Frederick & Haselton, 2007), as both are cues for fitness and, therefore, promote mating opportunities (Von Rueden, Gurven, & Kaplan, 2011; Frederick & Haselton, 2007). Furthermore, physical attractiveness relates to several communication skills and attributes which facilitate persuasiveness as they enhance the communicator's ability to deliver a message (Chaiken, Eagly, Sejwacz, Gregory & Christensen, 1978). This may then mean that physical strength may serve as an indicator of the general effectiveness of the persuader.

However, under scenarios involving threat, another's dominant look increases individual perception of danger (Zebrowitz & McDonald, 1991). This mediation indicates that fitness, as a quality of the persuader, may hinder his persuasion efforts if the individual feels threatened. Concluding, physical strength of the message source seems to act ambivalently; it will increase the chances of persuasive success if threat recognition mechanisms are not triggered but backfire if manipulative intent is recognized. The relationship between saliency of persuasion and persuasibility has been formerly studied by Campbell, Consiglio & Van Osselaer.

People are more sensitive to risk than to safety (Drottz-Sjöberg, 1993) as negative expectations account for a more prevalent factor of influence than positive ones (Persson & Sjöberg, 1989). This effect is expected to impact weak individuals more since lower levels of physical strength contribute to a more vulnerable state. Moreover, fitness has already been studied as an indicator of longevity, total health and success (Paffenbarger, Hyde & Wing, 1988) which further corroborates this hypothesis.

Many subgroups have been identified has having increase concern over danger, mostly those most vulnerable and more frail (Hale, 1996; Stiles et al., 2003). Smaller physical size points to an increased fear of crime (Killias, 1990; Hale, 1996; Smith & Torstensson, 1997; Killias & Clerici, 2000). Moreover, frailty and loss of capacity to defend against an impending physical

attack also enhances fear (Mckee & Milner, 2000; Warr, 1984). Particularly, elderly and young people experience more fear than the rest (May, 2001; Pain, 2000; Goodey, 1997), due to being more vulnerable than their middle-aged counterparts. This fear will contribute to a lower threshold of threat recognition and, hence, triggering manipulative attempt more promptly.

Vulnerability also affects the perception of potential opponents by overstating their physical strength and size (Fessler & Holbrook, 2013a; Fessler & Holbrook, 2013b; Fessler et al., 2012). Likewise, increasing the personal risks involved in engaging in conflict will also lead to a conceptualization of stronger and bigger foes (Fessler et al., 2014c). Feelings of inequity and a sense of disproportionality in terms of balance of power may arise between the two-parties which will likely heighten vigilance. There has been indication that vulnerable people are overall more sensitive to danger (McNaughton & Corr, 2004) and possess better skills in judging external stimuli as there are more relevant grounds and motives for self-protection (Young, Slepian, and Sacco, 2015). Sexually dimorphic characteristics, such as height, are also tied to less sensitivity in terms of assessing dominance (Watkins et al, 2010), suggesting that dominance perception is associated with the potential costs of an incorrect judgement. It then seems reasonable to hypothesize that physical strength and muscularity will act similarly. Therefore, individual physical strength is expected to increase the chances of persuasive success by decreasing sensitivity to manipulative intent. If the latter is salient, meaning that it is clearly noticeable and in case threat recognition is triggered, strong individuals may be less hesitant to engage in conflict and enable reactance more readily. The re-establishment of dominance and potentially bringing the opponent to justice will likely be prioritized as the costs of partaking in conflict are less severe and there are less chances of overestimating the opponent.

Literature indicates that there are two routes to attitude change (Petty & Cacioppo, 1981; Petty, Cacioppo & Schumann, 1983), labeled as central and peripheral. The central route values cognitive deliberation and the validity of the arguments in the message. On the other hand, the

peripheral route emphasizes that attitude change can occur due to an association with positive or negative cues, focusing on simplicity rather than the true values of the position.

People seem to partake in various levels of cognitive effort and information seeking in different situations (Burnkrant, 1976; McGuire, 1969). One of the moderators of information processing upon persuasion is involvement (Burnkrant & Sawyer, 1983; Petty & Cacioppo, 1981; 1983). While cognitive factors like the quality of the message play a more important role in high versus low involvement conditions (Petty & Cacioppo, 1979b; Petty, Cacioppo & Heesacker, 1981), peripheral cues, such as expertise and attractiveness of a message source act oppositely (Chaiken, 1980; Petty. Cacioppo & Goldman, 1981; Rhine and Severance, 1970). Involvement may possibly be a variable relevant in mitigating the effects of physical strength in persuasion.

The research being conducted is relevant in the following domains:

1. **Human Resources**: By better understanding the relationship between communicator physical strength and muscularity, and increased persuasibility, companies may have an increased awareness when selecting individuals for certain positions or tasks. The correlation of physical strength with more developed communication skills provides further information that may aid in employee training. Regarding compensation and the selection of leaders, companies can become more aware on the mechanisms that may hinder rational selection which should be based on one's true merit and cognitive processing mitigating the pitfalls that may rise from subconscious preferences based on physical attributes.

   From an ethical standpoint, this consideration may raise some concerns as one may pre-emptively assume stronger people will better fit certain roles. However, as mentioned, research points that when this variable is present, the likelihood of relevant communication competencies is increased. Selection is, generally, a very extensive process where companies are under a high involvement context and possess extensive knowledge in terms of screening, which contributes to decisions based mostly on cognition. Candidates must

rely on the central route in order to persuade employers that they are the right one for the position. Either way, if the association is present, the preferential selection of stronger individuals will not be due to their physical aptitude but to the competencies that they tend to have developed in which case, the ethical implications become void.

2. **Marketing & Sales**: This research may benefit this area by providing added clarification on how to deliver a message and elicit purchase, depending on the physical strength and general vulnerability of target consumers. By selecting the message source to better suit its recipients to the level of saliency of persuasive intent, by making it more or less apparent, companies can set up marketing and sales strategies that better fit their potential buyers. Knowing how consumers will react not only based on their frailty but also on the strength of the communicator, will allow for more effective marketing efforts. Ethically, increased knowledge over consumers may lead to predatory behavior that generates profit through pervasive methods. There are two main ways to mitigate this effect. Firstly, companies must guarantee that their offer has reasonable value for money, subsequently contributing to consumers' utility through relevant benefits. Moreover, their marketing efforts must not be manipulative in nature by deliberately advocating false claims or attributes to increase revenue. Secondly, persuasion knowledge, particularly consumer knowledge, may provide the necessary tools for individuals to have more awareness on the tactics companies subject them to, to elicit purchase, contributing to a better allocation of resources.
3. **Consumer Knowledge**: This study challenges individuals by pointing at the importance of physical strength in attitude change. In general, physical strength of either party will not affect the benefits or costs that result from accepting or rejecting the persuasive message. By becoming aware not only of the peripheral cues that may be influencing our decisions but also the impact of our physical strength on recognizing manipulative intent, we will be able to make more rational choices through a heightened persuasion knowledge.

Study

Summary

H1: Physical strength of the communicator increases persuasibility in strong individuals

H2: Physical strength of the communicator will decrease persuability in weak individuals

This study intends to elaborate on and illustrate the impact of the communicator's physical strength on persuasibility. I hypothesize that this variable contributes differently depending on whether threat recognition mechanisms are triggered. To moderate this effect, I selected strength of the recipient as it decreases vigilance and consequently, reduces the likelihood of the message being perceived as manipulative. While weaker individuals are expected to associate stronger persuaders with a bigger threat, stronger individuals, as they are both less vulnerable and less vigilant, will be influenced by the factors that contribute positively to persuasibility. Therefore, stronger individuals will perceive stronger advisors as being more effective due to the relationship that physical strength has with dominance, attractiveness and better communication skills.

In this study, through measuring the participants' perception towards the advisor, it was possible to assess its impact on manipulative intent recognition. Furthermore, I tested how the latter was influenced by one's individual physical strength, aiming to clarify the contribution of both on persuasion, using purchase intentions on a recommended product as an indicator. I also measured vigilance, prior and post the persuasive attempt, to better understand how individual strength mediates this factor throughout this process.

Finally, I wanted to understand how the persuader's physical strength may relate to other variables which are often associated positively to communication to potentially explain its

effect. For example, prior research has already pointed that attractive people are more likely to successfully persuade (Chaiken, 1979; Horai, Naccari & Fatoullah, 1974), possibly due to both perceived and real communication skills that are often associated with attractiveness of the message source (Chaiken, Eagly, Sejwacz, Gregory & Christensen, 1978). By measuring the communicator's attractiveness and physical strength, it may be attested a link between both and that physical strength has an indirect impact of physical strength on persuasibility, through attractiveness. However, it has also been shown that dominance increases the perception of danger, under a context of threat (Zebrowitz & McDonald, 1991) which indicates that physical strength, as a major indicator of dominance, may act similarly.

In addition, if one's individual strength impacts vigilance against persuasion, weaker recipients should be more likely to detect manipulative intent, leading to further resistance towards persuasion relative to stronger recipients. Weaker people should then perceive a strong advisor as a bigger threat and, thus, suspect of ulterior motives, while stronger people will be, as vigilance is reduced, less likely to associate it as a threat at all, focusing on aspects that contribute to persuasibility.

These hypotheses were explored under an experimental scenario where participants took part in a survey which presented a context of purchase, coupled with the advice and image of an alleged blogger expert of said product category.

Procedure

Three surveys were conducted with 110 participants each, identical in nature and content besides the picture of an alleged expert that was presented with a different body structure, as a potential proxy of physical strength. Participants had a composition as presented in the Appendix.

First, respondents were asked a series of demographic questions where they reported their gender, age and highest level of education attained. Subsequently, they measured their level of agreement (1=strongly disagree…7=strongly agree) on a list of various consumer profiling related sentences (e.g.: "Financial security is important to me"; "I am very loyal to certain brands"), in which some were used to assess vigilance. Specifically, perceptions of people's trustworthiness and honesty (henceforth, "Trustworthiness"), caution of people's intentions (henceforth, "Caution") and considering that people often act on ulterior motives (henceforth, "Suspicion"), were the three items used to infer vigilance. Next, respondents were challenged to rate themselves (1=Almost none…7=Exceptional) on a series of ten attributes (e.g.: "Creativity"; "Ambition"), most of which unrelated to the study in order not to alert participants of the specific variables under study. Here, I used self-reported unmanipulated physical strength as an indicator of the recipients' physical strength. This was made prior to presenting the picture of the alleged advisor in order not to influence people's own perception of physical strength by means of comparison. Also, I collected data for attributes related to successful communication and persuasion ("Confidence"; "Charisma) using the same scale.

Participants were asked to imagine a scenario in which they needed to purchase a carpet. Two options were presented simultaneously, each accompanied by a fictitious description.

A) TRISPAN FIBER: "With excellent durability and built-in stain and soil resistance, this carpet is woven with an exclusive fiber that resists stains and wear without sacrificing softness."

B) SIMDEX FIBER: "This carpet resists both crushing and matting and is performance-tested to stand up to the heaviest traffic. Its stain-resistant material keeps your carpet looking like new."

Lastly, an alleged expert blogger recommended one of the two options, in counterbalanced order, further explaining his advice (e.g.: "TRISPAN FIBER is at the cutting-edge of

technology and offers excellent qualities when it comes to resisting wear-and-tear."). A picture of the blogger was also presented in each survey, using the same man with a varying degree of muscularity.

Figure 1: Image of the alleged expert in each of the three conditions, I (weak), II (medium), III (strong).

Afterwards, respondents were asked to rate the blogger in terms of both physical and behavioral attributes. Namely, they answered how attractive, physically strong, confident, sincere, honest, manipulative and pushy they considered the blogger (1=not at all...7=Extremely). These items served as a measure of advisor characterization and vigilance post-exposure to a persuasion attempt. Participants then expressed their purchase intentions (three items; e.g.: "I would be likely to buy the recommended carpet."; 1=strongly disagree…7=strongly agree), prior to an optional open-ended report on explaining their final choices.

Results

The study provided various insights regarding different aspects under analysis and, as such, the results may be presented in four clearly distinct parts that mirror each sub-section of the survey model.

Strength self-report: Respondents were categorized under three levels of self-physical strength, “weak”, “medium”, “strong” for a self-reported level of 2 or less, 3 to 5 and 6 and over, respectively. Respondents were classified as follows:

a) Weak (M= 1,79; Std=0,41): A total of 105 weak individuals (Survey I, II and III with 34, 41 and 31 weak participants, respectively).
b) Medium (M= 3,90; Std= 0,8): A total of 203 medium individuals (Survey I, II and III with 67, 64 and 72 medium participants, respectively).
c) Strong (M= 6,14; Std= 0,36): A total of 20 strong individuals (Survey I, II and III with 9, 5 and 7 strong participants, respectively).

The total sample of 330 participants reported an average that fell on the medium levels (M=3,37; V=1,92).

Pre-scenario vigilance (pre-exposure): I submitted each of the three variables that assessed pre-scenario vigilance to an ANOVA with individual physical strength as a factor.

1) Trustworthiness: The analysis revealed that the effect of strength was significant (F=15,96; p<.001). Weaker people reported lower levels of trustworthiness (M= 2,40; Std= 1,45) relative to medium (M= 3,40; Std= 1,53) and strong people (M= 3,10; Std= 1,14). The correlation between physical strength and trustworthiness was not significant (pearson=0,17).
2) Caution: The analysis revealed that the effect of strength was significant (F=19,34; p<.001). Weaker people reported lower levels of caution (M= 4,04; Std= 1,82) relative to medium (M= 5,2 Std= 1,43) and strong people (M= 5,09; Std= 1,61). The correlation between physical strength and caution was not significant (pearson=0,28).
3) Suspicion: The analysis revealed that the effect of strength was significant (F=16,15; p<.001). Weaker people reported lower levels of suspicion (M= 3,92; Std= 1,82) relative to medium (M= 4,92; Std= 1,46) and strong people (M= 5,33; Std= 1,20). Strong participants

reported the highest mean results on this variable. The correlation between physical strength and suspicion showed a weak positive relationship (pearson=0,31).

Recipient positive attributes associated with physical strength (pre-exposure): I submitted each of the two self-reported variables that assessed potential positive attributes on persuasion relative to physical strength to an ANOVA with individual physical strength as a factor.

1) Confidence: The analysis revealed that the effect of strength was significant (F=27,38; p<.001). Weaker people perceived themselves as less confident (M= 3,09; Std= 1,64) relative to medium (M= 4,09; Std= 1,42) and strong people (M= 5,38; Std= 1,36). There was a progression on confidence levels relative to strength. The correlation between physical strength and suspicion showed a weak positive relationship (pearson=0,41).
2) Charisma: The analysis revealed that the effect of strength was significant (F=20,42; p<.001). Weaker people reported lower levels of charisma (M= 3,07; Std= 1,64) relative to medium (M= 4,16; Std= 1,43) and strong people (M= 4,52; Std= 1,63). There was a progression on confidence levels relative to strength. The correlation between physical strength and suspicion showed a weak positive relationship (pearson=0,36).

Communicator strength: Each one of the three surveys presented a different level of muscularity and physique of the same man, rated as “weak”, “medium” and “strong”. The weaker advisor (M= 3,74; Std= 1,25) presented lower levels of physical strength relative to the medium (M= 4,13; Std= 1,31) and strong one (M= 4,69; Std= 1,33).

Moreover, I submitted the advisor’s physical strength to an ANOVA with each study condition as a factor. The results were significant (F=15,09; p<.001).

Lastly, weak individuals (M= 3,56) reported lower levels overall of advisor physical strength relative to medium (M= 4,47) and strong people (M= 4,62). These results were significant (F=18,88; p<.001).

Communicator positive attributes associated with physical strength: I submitted each of the two variables that assessed potential positive attributes on persuasion relative to the advisor's physical strength to an ANOVA with each study condition as a factor.

1) Attractiveness: The analysis revealed that the effect of advisor strength was significant (F=7,78; p<.001). The weak advisor was perceived as less attractive (M= 3,55; Std= 1,49) relative to the medium (M= 3,6; Std= 1,55) and strong version (M= 4,28; Std= 1,56). There was a progression on the perception of attractiveness relative to strength. The correlation between advisor physical strength and his attractiveness showed a strong positive relationship (pearson=0,74). Weak individuals (M= 3,14) reported lower levels overall of advisor attractiveness relative to medium (M= 4,13) and strong people (M= 4,14). These results were significant (F=15,64; p<.001).
2) Confidence: The analysis revealed that the effect of advisor strength was not significant (F=2,26; p=0,1062). Medium people reported lower levels of confidence (M= 4,36; Std= 1,39) relative to weak (M= 4,44; Std= 1,34) and strong people (M= 4,74; Std= 1,41). The correlation between advisor physical strength and his confidence showed a moderate positive relationship (pearson=0,69). Weak individuals (M= 3,71) reported lower levels overall of advisor confidence relative to medium (M= 4,90) and strong people (M= 4,86). These results were significant (F=31,23; p<.001).

Post-scenario vigilance (post-exposure): I submitted each of the four variables that assessed post-scenario vigilance to an ANOVA with each study condition as a factor.

1) Sincere: The analysis revealed that the effect of advisor strength was not significant (F=1,46; p=0,23). The weak advisor was rated with similar levels of sincerity (M= 3,45; Std= 1,43) relative to the medium (M= 3,15; Std= 1,27) and strong advisor (M= 3,28; Std= 1,33). The correlation between advisor physical strength and his sincerity showed a weak positive relationship (pearson=0,44). Weak individuals (M= 2,68) reported lower levels

overall of advisor sincerity relative to medium (M= 3,58) and strong people (M= 3,67). These results were significant (F=18,00; p<.001).

2) Honest: The analysis revealed that the effect of advisor strength was not significant (F=0,68; p=0,51). The weak advisor was rated with similar levels of sincerity (M= 3,35; Std= 1,32) relative to the medium (M= 3,18; Std= 1,28) and strong advisor (M= 3,37; Std= 1,33). The correlation between advisor physical strength and his honesty showed a weak positive relationship (pearson=0,46). Weak individuals (M= 2,70) reported lower levels overall of advisor honesty relative to medium (M= 3,58) and strong people (M= 3,62). These results were significant (F=18,12; p<.001).
3) Manipulative: The analysis revealed that the effect of advisor strength was not significant (F=0,37; p=0,69). The weak advisor was rated with similar levels of sincerity (M= 3,69; Std= 1,58) relative to the medium (M= 3,52; Std= 1,56) and strong advisor (M= 3,65; Std= 1,58). The correlation between advisor physical strength and his perception of being manipulative showed a weak positive relationship (pearson=0,32). Weak individuals (M= 2,78) reported lower levels overall of advisor's manipulation relative to medium (M= 3,98) and strong people (M= 4,38). These results were significant (F=26,53; p<.001).
4) Pushy: The analysis revealed that the effect of advisor strength was not significant (F=0,18; p=0,84). The weak advisor was rated with similar levels of sincerity (M= 3,37; Std= 1,64) relative to the medium (M= 3,30; Std= 1,58) and strong advisor (M= 3,25; Std= 1,54). The correlation between advisor physical strength and his pushiness was not significant (pearson=0,18). Weak individuals (M= 2,65) reported lower levels overall of advisor pushiness relative to medium (M= 3,63) and strong people (M= 3,52). These results were significant (F=14,56; p<.001).

Purchase intentions (persuasion proxy): Persuasion was measured via the last three questions on purchase intentions, which were levered equally in value. Each showed a weak positive

relationship with the physical strength of the advisor ("I would definitely buy the recommended carpet." Pearson= 0,39; "I would be likely to buy the recommended carpet." Pearson= 0,43; "I would consider buying the recommended carpet." Pearson= 0,39).

I submitted the compiled results of the three questions for each category of people ("weak", "medium" and "strong" people), to an ANOVA with each study condition as a factor (I, II and III). Thus, I could assess the effect of the advisor relative to individual physical strength. Results are as follows:

1) Weak people: The analysis revealed that the effect of advisor strength on weak participants was significant ($F=3,92$; $p<.05$). Under conditions I and II, weak people had similar purchase intentions (M= 2,90: Std= 1,66 / M=2,87; Std= 1,77; respectively). However, weak people were more inclined to purchase if the advisor was strong (M=3,52; Std= 1,96).
2) Medium people: The analysis revealed that the effect of advisor strength on medium participants was not significant ($F=0,56$; $p=0,57$). Medium people had similar purchase intentions among all the conditions (I: M= 4,09; Std= 1,77 / II: M= 3,90; Std= 1,72 / III: M=3,97; Std= 1,74).
3) Strong people: The analysis revealed that the effect of advisor strength on strong participants was significant ($F=3,96$; $p<.05$). Under conditions II and III, strong people had similar purchase intentions (M= 4,8: Std= 1,78 / M=4,71; Std= 1,52; respectively). Strong people were less inclined to buy if the advisor was weak (M=3,56; Std= 1,72).

Overall, people were more inclined to buy the stronger they were (weak: M= 3,11; medium= 3,99; strong: M= 4,24). These results were significant ($F=28,98$; $p<.001$). Regarding the different conditions, purchase intentions were similar under I (M= 3,68) and II (M=3,61) while there was generally more inclination to purchase when the advisor was strong (M=3,90). These results were not significant ($F=2,38$; $p= 0,09$).

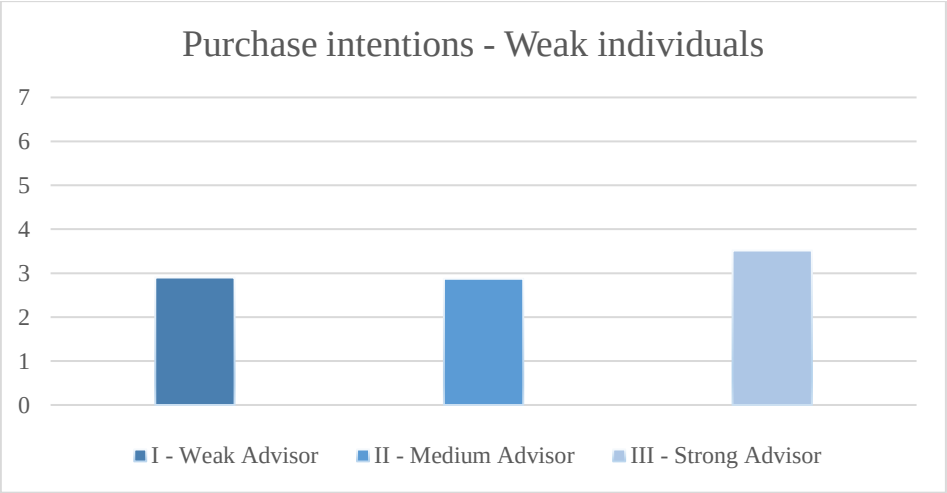

Figure 2: Mean purchase intentions among weak participants across the three study conditions.

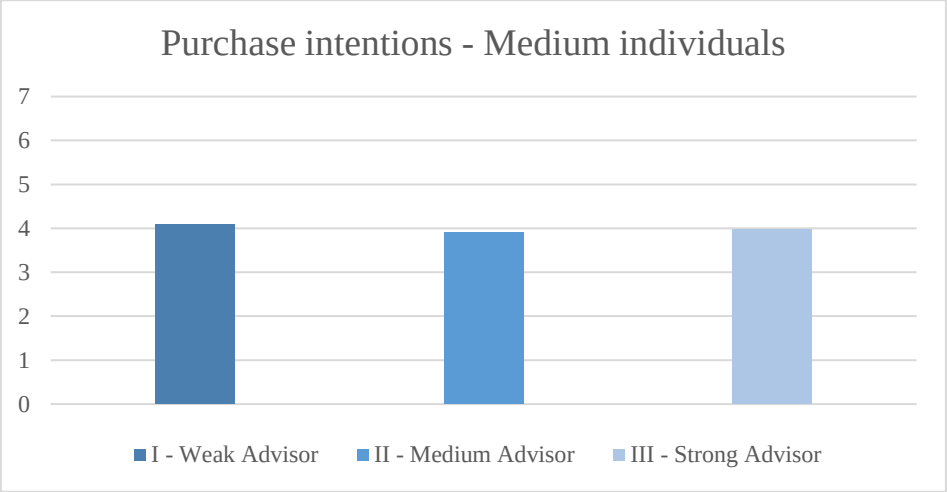

Figure 3: Mean purchase intentions among medium participants across the three study conditions.

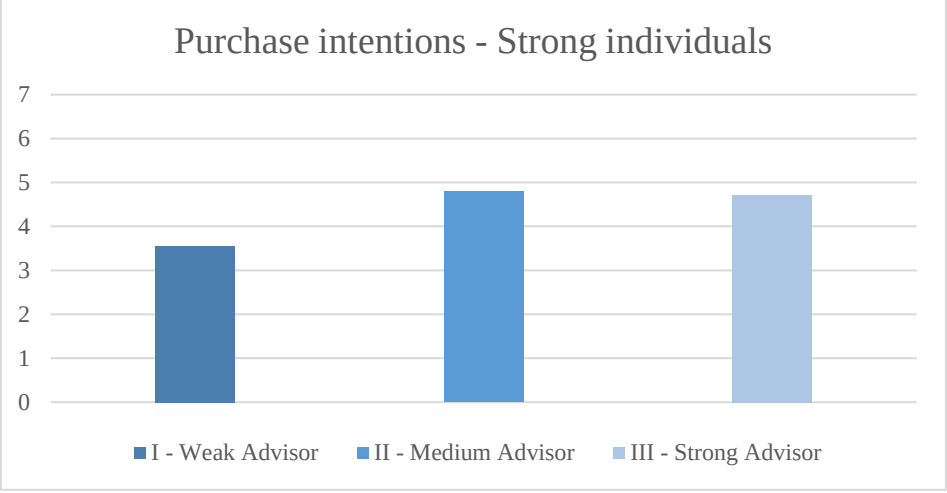

Figure 4: Mean purchase intentions among strong participants across the three study conditions.

General Discussion

Summary of results

The study conducted gave us a greater understanding on the relationship between physical strength and vigilance, specifically on how the first may affect perceptions and predisposition to persuasion. It is important to note that there was a tendency for stronger individuals to report higher ratings. This may be, in itself, an indicator of vigilance, as weak participants were more conservative relative to medium and strong respondents.

The items regarding pre-exposure vigilance were all significant. Weak individuals reported lower values on all these factors, even though trustworthiness was expected to act oppositely to caution and suspicion. The more trusting a person is towards others the less cautious and suspicious she is expected to behave. These apparent inconsistent results may indicate the conservatism of weaker individuals despite the question at hand.

Regarding positive communication skills associated with persuasion, physically stronger individuals reported higher values. These results were significant and there was a clear progression on confidence and charisma relative to self-reported physical strength.

The three images reported significant different levels of physical strength. The stronger the advisor, the higher the results on this factor as well as in Confidence and Attractiveness. This indicates that the images were effective in their purpose, as the only difference between them was the advisor's muscularity and body structure. Also, the correlation between advisor's physical strength and these indicators was also particularly relevant, being the two highest pearson values throughout the study. Weaker people reported lower levels of advisor's physical strength overall, relative to medium and strong people, while the latter rated the highest. These results were significant.

All variables used as a proxy for post-exposure vigilance were not significant. Attributes of advisor honesty and sincerity and perceptions of pushiness and manipulation showed similar results despite the study's conditions. Again, individual physical strength contributed to higher values of the four items. These results were significant.

Lastly, regarding purchase intentions, the effect of advisor physical strength was significant on weak and strong individuals but not in medium individuals. Medium participants reported similar levels despite the advisor's appearance. Individual physical strength also related significantly to greater purchase intentions, generally. Looking at each condition, purchase intentions were similar under I and II and greater in III, with non-significant differences.

Theoretical contribution and practical implications

The study I designed is the first that approaches the relationship that is established between a communicator and a recipient relative to their physical strength. As such, this study is the first attempt to understand how these indicators act together. These results are not as obvious as it may seem as most acts of purchase involve persuasion attempts, and physical strength has been pointed to act ambivalently.

Results on pre-exposure vigilance, although significant, were inconsistent. "Trustworthiness", "Caution" and "Suspicion" acted similarly despite their antagonism. This does not necessarily mean that weaker individuals are less vigilant, rather indicating that self-reported levels of these attributes have led to inconclusive results.

Stronger individuals also reported higher levels of "Confidence" and "Charisma". These results may serve as a complement to current research by Campbell, Consiglio & Van Osselaer, as an explanation for the lesser vigilance experienced by stronger individuals.

Stronger individuals reported higher purchase intentions which may relate to a greater approach motivation, defined as an inherent willingness to act (e.g. purchase something). Both weak and strong individuals reported significant results on the impact on purchase intentions of advisor physical strength while medium respondents did not. This has serious implications in respect to consumer protection as weaker individuals are particularly affected by strong persuaders. For instance, older people become increasingly weaker over time and will, therefore, be particularly vulnerable from persuasion by stronger communicators. This suggests that, under this scenario, H1 held while H2 did not. As for strong individuals, this study may provide a trigger to acquire further persuasion knowledge that leads to better decision making on purchase.

There are two likely explanations for the positive effect of advisor physical strength on weak individual's persuasibility. The first relates to the fact that weaker people may act more submissively and therefore follow instructions more easily. The second is that there is an aspirational factor that makes weaker people act similarly due to interacting with someone that they perceive as more successful and dominant.

Strong individuals may purchase more when the persuader is stronger because of an effect of self-recognition. They may feel more ready to follow directions from someone whom they perceive as being of equal or superior physical strength and therefore identify as belonging to the same in-group.

Medium individuals, however, seem not to focus on physical strength as a relevant indicator and were not significantly affected by advisor physical strength. A possible explanation for this is that they would rather focus on other aspects when deciding on a possible purchase. This may happen as they are not in a vulnerable position in terms of physicality nor are they inclusive of a physically strong in-group and therefore look for other factors to aid them in their decision-making process.

Most importantly, advisor physical strength has shown not to relevantly affect purchasing. On the other hand, recipient physical strength impacted purchase intentions greatly. This means that the stronger the individual is the more likely he is to buy, potentially due to increased levels of confidence, as indicated, and security. This suggests that companies whose costumer base is generally stronger (e.g. fitness related industries) can more easily market their products while companies whose segments include physically stronger consumers may have an incentive to pursue such targeting.

Ultimately, this means that, generally, physical strength of the persuader is not a significant factor, mostly due to the fact that most people, those who fall under the medium category, are not significantly affected. These conclusions are paramount in marketing, as physical strength as an isolated factor does not seem to positively impact consumer purchase. This goes against the trend that physically fit individuals are more desirable in advertising.

Related research

Approach motivation: Approach motivation seems to be more prevalent in stronger people. Differences in purchase intentions between the various categories of people relative to physical strength, may not be due to how effective the persuasion attempt was but in fact simply refer to a higher likelihood to purchase, independently of the established communication or the nature of the advisor. By empowering respondents with the freedom to report various levels of purchase intent, there is no reduction of the effect of approach motivation, leaving this as a potentially contributor to the results of physically different respondents.

In-group bias: In-group bias is defined as a preferential pattern of treatment and valuing towards members of a social group to which an individual psychologically identifies as being part of. This may contribute to the positive effect of advisor physical strength among strong

individuals, as these would be more likely to favor equally strong people who they perceive as belonging to the same in-group. Stronger advisors may therefore be viewed by strong recipients in a more positive light.

Obedience: Obedience may be a moderator of weaker people's increased persuasibility when faced with a stronger advisor. Stronger communicators are more likely to be considered authority figures, as they are perceived as more dominant, especially when there is a clear discrepancy in terms of strength between them and their recipients. Research has shown that obedience to authority may even surpass conscience, under extreme conditions (Milgram, 1963), so it is not farfetched for it to also affect less morally dubious situations. Weaker individuals may then more readily comply to stronger advisors and behave submissively.

Limitations and recommendations for future research

The main limitation pertaining this study is the absence of real-life experimentation. This may jeopardize the results as the impact of the communicator's physical strength may be lessened by the lack of a relevant threat. The direct relationship that would have been established between the advisor and the costumer would likely contribute to different values because of the direct experience of physical strength, rather than that of an image.

Furthermore, there are no stakes involved regarding the recipients' purchase intentions which may lead to inaccurate measures on those accounts. If the respondents had a set of resources to allocate when committing to a specific choice, results would likely mirror more accurately what happens in a real purchase situation. For example, an experiment could be conducted where respondents were given a set of fictitious credits that they would need to spend and distribute when shown a group of items. Some of these items would receive a recommendation from an alleged expert.

Likewise, to test persuasibility, this study could have been made in a way in which respondents would have had to choose one of the two options, potentially reducing the effect of approach motivation as people could not choose not to purchase less.

Another important point relates to the conservatism that was evident in weaker individuals. This led to results that were inconclusive, specifically on potential explanations for vigilance. This may be an indicator of vigilance itself as people who are weaker are less inclined to answer in the extremes. Still, the underlying effects that moderate these attitudes among weaker individuals remain to be clarified and studied.

The exposure to a persuasion attempt under a context in which participants were unaware of their participation as respondents in a research project such as, for example, one in which purchase intentions would be measured in a real situation with communicators with various degrees of physical strength could provide further understanding of its impact on persuasion. On the other hand, the increased level of variability, as the advisor would be different as well as communication itself (e.g. voice; inflation; posture; gestures), would blur the effect of advisor physical strength as an isolated factor.

To address the issue of evaluating manipulative intent, I suggest conducting a study which would ask participants to report manipulative intent while comparing two individuals of varying physical strength. Having this comparison would raise cognitive efforts among the participants to evaluate both individuals, providing potentially clearer results. A pilot study on potentially affecting advisor characteristics (e.g. attractiveness) would need to be done prior. Keep in mind, the correlation between muscularity, a general proxy of physical strength, and other positive attributes (e.g. attractiveness) may be different depending on the culture under analysis and gender. For example, western cultures privilege physically stronger people and aesthetics play a relevant social role while in eastern cultures, perceptions of success may not be based as much

on these aspects. Also, muscularity is predicted to affect male advisors more than their female counterparts due to the inherent evolutionary bias and aesthetics.

The impact of physical strength may also vary depending on other variables, both pertaining the communicator and the recipient. This means that, for example, level of expertise may reduce the effect of the advisor's appearance as there is a more relevant attribute relevant to the purchase, reducing the risk of allocating resources on wrong choices. Also, as previously stated, costumer involvement and knowledge may play an important role in mitigating external factors to the message itself, promoting a more rational decision making based on cognition and hindering the role of the advisor overall. Consequently, I suggest studying the effect of advisor physical strength while varying variables that are identified as influencing persuasibility.

In terms of sampling, it would be optimal to have an equal number of respondents per strength level. This is difficult as people that report extreme levels of physical strength are fewer in number. Moreover, answers were collected from a random online pool of respondents with a risk of having a less serious attitude towards the study. If, on one hand, this contributes to a representative and highly diverse sample of the population, on the other, it may increase error due to lower interest and competencies on how to properly analyze and respond to a research survey.

Lastly, I analyzed a context of purchase which may not replicate the others that are developed under the previously specified relevant areas of management. In terms of team dynamics, inter-personal relationships in which individuals are engaged with persuasive or manipulative intents may behave differently. For example, during teamwork, situations involving persuasion attempts of fellow colleagues may be influenced differently than in purchasing as the resources (e.g. time, dominant status in the company) and motivational factors involved are different in nature and extrinsic value. Therefore, I recommend other studies to be conducted under such scenarios in order to address this specific issue of potential erroneous generalization.

References

Bar, Moshe, Maital Neta and Heather Linz (2006), Very first impressions, Emotion, 6 (2), 269-278

Blaker, Nancy and Mark Van Vugt (2014), The status-size hypothesis: How cues of physical size and social status influence each other, The Psychology of Social Status, Edition 1st, Chapter 6, 119-137

Braiker, Harriet (2004), Who's Pulling Your Strings? How to Break the Cycle of Manipulation and Regain Control of Your Life, McGraw-Hill Education

Brehm, Sharon. and Jack Brehm, (1981). Psychological Reactance: A Theory of Freedom and Control, San Diego, CA, Academic Press

Burnkrant Robert (1976), A Motivational Model of Information Processing Intensity, Journal of Consumer Research, 3 (1), 21-30

Burnkrant, Robert and Alan Sawyer (1983), Effects of Involvement and Message Content on Information Processing Intensity in Information Processing Research in Advertising, 43-64

Campbell, Margaret and Amna Kirmani (2000), Consumers' use of Persuasion Knowledge: The effects of accessibility and cognitive capacity on perceptions of an influence agent, Journal of Consumer Research, 27 (1), 69-83

Chaiken, Shelly (1979), Communicator Physical Attractiveness and Persuasion, Journal of Personality and Social Psychology, 37 (8), 1387-1397

Chaiken, Shelly (1980), Heuristic versus Systematic Information Processing and the Use of Source versus 'Message Cues in Persuasion, Journal of Personality and Social Psychology, 39 (5), 752-766

Chaiken, Shelly, Alice Eagly, Dorothy Sejwacz, W.Larry Gregory and Dana Christensen (1978), Communicator physical attractiveness as a determinant of opinion change, Catalog of Selected Documents in Psychology 8, no. 1639, 9-10

Consiglio, Irene, Margaret Campbell and Stijn Van Osselaer (2016), Dumb muscle: When and why physical strength increases or decreases persuadability

Driscoll, Richard, Keith Davis and Milton Lipetz (1972), Parental interference and romantic love: The Romeo and Juliet effect, Journal of Personality and Social Psychology, 24 (1), 1-10

Drottz-Sjöberg, Britt-Marie (1993), Risk perceptions related to varied frames of reference, Proceedings of the Third conference of Society for Risk Analysis Europe, 55-66. Paris: European Section of the Society for Risk Analysis, 1991.

Fessler, Daniel and Colin Holbrook (2013), Bound to lose: Physical incapacitation increases the conceptualized size of an antagonist in men, PLoS One, 8 (8)

Fessler, Daniel and Colin Holbrook (2013), Friends shrink foes: The presence of comrades decreases the envisioned physical formidability of an opponent, Psychological Science, 24 (5), 797-802

Fessler, Daniel, Colin Holbrook and Jeffrey Snyder (2012), Weapons make the man (larger): Relative formidability influences perceived size and strength, PLoS One, 7 (4)

Fessler, Daniel, Colin Holbrook, Jeremy Pollack and Jennifer Hahn-Holbrook (2014), Stranger danger: Parenthood and child presence increase the envisioned bodily formidability of menacing men, Evolution and Human Behavior 35, 109-117

Frederick, David and Martie Haselton (2007), Why Is Muscularity Sexy? Tests of the Fitness Indicator Hypothesis, Personality and Social Psychology Bulletin, 33 (8), 1167-1183

Goodey, Jo (1997), Boys Don't Cry: Masculinities, Fear of Crime, and Fearlessness, 37 (3), 401-418

Greve, Werner, and Rainer Strobl (2004), Social and Individual Coping With Threats: Outlines of an Interdisciplinary Approach, Review of General Psychology, 8 (3), 194-207

Hale, Chris (1996), Fear of Crime: A Review of the Literature, International Review of Victimology 4 (2), 79-150

Holbrook, Colin, Paulo Sousa and Jennifer Hahn-Holbrook (2011), Unconscious vigilance: Worldview defense without adaptations for terror, coalition, or uncertainty management. Journal of Personality and Social Psychology, 101 (3), 451-466

Horai, Joann, Nicholas Naccari and Ellit Fatoullah (1974), The Effects of Expertise and Physical Attractiveness Upon Opinion Agreement and Liking, Sociometry, 37 (4), 601-606

Huppertz, John, Sidney Arenson and Richard Evans (1978), An Application of Equity Theory to Buyer-Seller Exchange Situations, Journal of Marketing Research, 15 (2), 250-260

Janiszewski, Chris (1988), Preconscious Processing Effects: The Independence of Attitude Formation and Conscious Thought, Journal of Consumer Research, 15 (2), 199-209

Jones, Benedict, Lisa DeBruine, Julie Main, Anthony Little, Lisa Welling, David Feinberg and Bernard Tiddeman (2010), Facial cues of dominance modulate the

short-term gaze-cuing effect in human observers, Proceedings of the Royal Society B, 277, 617-624

Killias, Martin (1990), Vulnerability: Towards a Better Understanding of Key Variable in the Genesis of Fear of Crime, Violence and Victims, 5 (2), 97-108

Killias, Martin and Christian Clerici (2000), Different Measures of Vulnerability in their Relation to Different Dimensions of Fear of Crime, 40 (3), 437-450

Kirmani, Amna (1990), The effect of perceived advertising costs on brand perceptions, Journal of Consumer Research, 17 (2), 160-171

Kirmani, Amna and Peter Wright (1989), Money talks: Perceived advertising expense and expected product quality, Journal of Consumer Research, 16 (3), 344-353

Kirmani, Amna and Rui (Juliet) Zhu (2007), Vigilant Against Manipulation: The Effect of Regulatory Focus on the Use of Persuasion Knowledge. Journal of Marketing Research: November 2007, 44 (4), 688-701

Lavidge, Robert and Gary Steiner (1961), A Model for Predictive Measurements of Advertising Effectiveness, Journal of Marketing, 25 (6), 59-62

Lukaszewski, Aaron, Zachary. Simmons, Cameron Anderson and James Roney (2015), The role of physical formidability in human social status allocation, Journal of Personality and Social Psychology, 110 (3), 385-406

Mangleburg, Tamara and Terry Bristol (1998), Socialization and Adolescents' Skepticism toward Advertising, Journal of Advertising, 27(3), Advertising to Children, 11-21

May, David (2001), The Effect of Fear of Sexual Victimization on Adolescent Fear of Crime, Sociological Spectrum, 21 (2), 141-174

McGuire, William (1969). An information-processing model of advertising effectiveness. Behavioral and Management Sciences in Marketing

Mckee, Kevin And Caroline Milner (2000), Health, Fear of Crime and Psychosocial Functioning in Older People, Journal of Health Psychology, 5(4), 473-486

McNaughton, Neil and Philip Corr (2004), A two-dimensional neuropsychology of defense: fear/anxiety and defensive distance, Neuroscience and Biobehavioral Reviews, 28 (3), 285-305

Milgram, Stanley (1963), Behavioral Study of Obedience, The Journal of Abnormal and Social Psychology, 67 (4), 371-378

Oosterhof, Nikolaas and Alexander Todorov (2008), The functional basis of face evaluation, Proceedings of the National Academy of Sciences of the United States of America, 105 (32), 11087-11092

Paffenbarger, Ralph, Robert Hyde and Alvin Wing (1988), Exercise, fitness, and health: a consensus of current knowledge: proceedings of the International Conference on Exercise, fitness and health, 33-48

Pain, Rachel (2000), Place, Social Relations, and the Fear of Crime: A Review, Progress in Human Geography, 24 (3), 365-387

Persson, Lars-Olof and Lennart Sjöberg (1985), Mood and Positive Expectation, Social Behavior and Personality an International Journal, 13 (2), 171-181

Petty, Richard and John Cacioppo (1979), Issue-involvement can increase or decrease persuasion by enhancing message-relevant responses and persuasion, Journal of Personality and Social Psychology, 37 (10), 1915-1926

Petty, Richard and John Cacioppo (1981), Attitudes and persuasion: Classic and contemporary approaches, Boulder, CO, Westview Press

Petty, Richard, John Cacioppo and David Schumann (1983), Central and peripheral routes to advertising effectiveness: The moderating role of involvement, Journal of Consumer Research, 10 (2), 135-146

Petty, Richard, John Cacioppo and Martin Heesacker (1981), Effects of rhetorical questions on persuasion: A cognitive response analysis, Journal of Personality and Social Psychology, 40 (3), 432-440

Petty, Richard, John Cacioppo and Rachel Goldman (1981), Personal Involvement as a Determinant of Argument-Based Persuasion, Journal of Personality and Social Psychology, 41 (5), 847-855

Rhine, Ramon and Laurence Severance (1970), Ego-involvement, discrepancy, source credibility, and attitude change, Journal of Personality and Social Psychology, 16 (2), 175-190

Rossiter, John R. and Larry Percy (1987), Advertising and Promotion Management, New York, NY, England: Mcgraw-Hill Book Company Advertising and Promotion

Sell, Aaron, Leda Cosmides, John Tooby, Daniel Sznycer, Chistopher Von Reuden and Michael Guerven (2009), Human adaptations for the visual assessment of strength and fighting ability from the body and face, Proceedings of the Royal Society B: Biological Sciences, 276(1656), 575-584

Smith, William and Marie Torstensson (1997), Gender Differences in Risk Perception and Neutralizing Fear of Crime: Toward Resolving the Paradoxes, British Journal of Criminology, 37 (4), 608-634

Stiles, Beverly, Shaheem Halim and Howard B. Kaplan (2003), Fear of Crime among Individuals with Physical Limitations, Criminal Justice Review, 28 (2), 232-253

Taylor, D. Christopher and Nelson Barber (2011), Measuring the Influence of Persuasion Marketing on Young Wine Consumers, Journal of Food Products Marketing, 18 (1), 19-33

Todorov, Alexander and Janine Willis (2006), First impressions: Making up your mind after a 100-ms exposure to a face, Psychological Science, 17 (7), 592-598

Todorov, Alexander, Manish Pakrashi and Nikolaas N. Oosterhof (2009), Evaluating faces on trustworthiness after minimal time exposure, Social Cognition, 27 (6), 813-833

Toscano, Hugo, Thomas Schubert and Aaron Sell (2014), Judgments of dominance from the face track physical strength, Evolutionary Psychology: An International Journal of Evolutionary Approaches to Psychology and Behavior, 12 (1), 1-18

Toscano, Hugo, Thomas Schubert, Ron Dotsch, Virginia Falvello and Alexander Todorov, Physical Strength as a Cue to Dominance: A Data-Driven Approach, Personality & social psychology bulletin, 42 (12), 1603-1616

Von Rueden, Christopher, Michael Gurven and Hillard Kaplan (2008), The multiple dimensions of male social status in an Amazonian society, Evolutionary Human Behavior, 29 (6), 402-415

Warr, Mark (1984), Fear of Victimization: Why Are the Elderly More Afraid, Social Science Quaterly, 65 (3), 681-702

Watkins, Christopher, Benedict Jones and Lisa Debruine (2010), Individual differences in dominance perception: Dominant men are less sensitive to facial cues of male dominance, Personality and Individual Differences, 49 (8), 967-971

Watkins, Christopher, Paul Fraccaro, Finlay Smith, Jovana Vukovic, David Feinberg, Lisa Debruine and Benedict Jones (2010), Taller men are less sensitive to cues of dominance in other men, Behavioral Ecology, 21 (5), 943-947

Windhager, Sonja, Katrin Schaefer and Bernhard Fink (2011), Geometric morphometrics of male facial shape in relation to physical strength and perceived attractiveness, dominance, and masculinity, American Journal of Human Biology: The Official Journal of the Human Biology Council, 23 (6), 805-814

Worchel, Stephen, Susan Arnold and Michael Baker (1975), The Effects of Censorship on Attitude Change: The Influence of Censor and Communication Characteristics, Journal of Applied Social Psychology, 5: 227–239

Yanover, Tovah and Joel Thompson (2010), Perceptions of health and attractiveness: The effects of body fat, muscularity, gender, and ethnicity, Journal of Health Psychology, 15 (7), 1039-1048

Young, Steven, Michael Slepian and Donald Sacco (2015), Sensitivity to perceived facial trustworthiness is increased by activating self-protection motives, Social Psychological and Personality Science, 6 (6), 607-613

Zebrowitz, Leslie and Susan McDonald (1991), The impact of litigants' baby-facedness and attractiveness on adjudications in small claims courts, Law and Human Behavior, 15 (6), 603-623

Appendix

Demographics:

Age	I	II	II
Less than 18	3%	7%	9%
18 - 24	34%	28%	28%
25 - 34	35%	25%	30%
35 - 44	11%	23%	22%
45 - 54	11%	9%	7%
55 and over	6%	8%	4%

Table 1: Age distribution among the three study conditions.

Highest Level of Education Attained	I	II	II
Less than high school	5%	11%	9%
High school graduate or equivalent	10%	11%	13%
Some college or associate degree	30%	34%	31%
Bachelor's degree	38%	28%	28%
Master's degree	14%	13%	17%
Doctoral degree	3%	4%	2%

Table 2: Education level distribution among the three study conditions.

Gender	I	II	II
Male	35%	41%	42%
Female	63%	58%	55%
Other	4%	2%	4%

Table 3: Gender distribution among the three study conditions.